

REMARKS

The above amendments and the following remarks are fully and completely responsive to the Office Action dated March 22, 2005. Claims 1-8 and 12-20 are pending in this application with claims 9-11 and 21-22 canceled and claims 1, 3-7, 12-15, 17, 19 and 20 amended. In the outstanding Office Action, claims 6, 9 and 12 were objected to; claims 1, 3-21 were rejected under 35 U.S.C. § 102(b) (two different rejections); and claims 2 and 22 were rejected under 35 U.S.C. § 103(a) (two different rejections). No new matter has been added. Claims 1-8 and 12-20 are presented for reconsideration.

Claim Objection

Claims 6, 9 and 12 were objected to due to the informalities noted in the outstanding Office Action. The cancellation of claim 9 has rendered moot the objection to this claim. Applicant's amendments to claims 6 and 12 correct the informalities noted in the Office Action. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the objection to claims 6 and 12.

35 U.S.C. §§ 102(b) and 103(a)

Claims 1, 3-11 and 19-21 were rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Sha et al. (U.S. Patent No. 6,404,294 B1, "Sha"). The cancellation of claims 9-11 and 21 renders this rejection moot as to these claims.

In making this rejection, the Office Action asserts that this reference teaches each and every element of the claimed invention. Applicant disagrees and requests reconsideration of this rejection.

Claim 2 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Sha in view of Applicant's Admitted Prior Art (AAPA) as represented by Figure 1. In making this rejection, the Office Action asserts that the combination of these two references teaches and/or suggests the claimed invention. Applicant disagrees and requests reconsideration of this rejection.

Claim 22 was also rejected under 35 U.S.C. § 103(a) as being unpatentable over Sha. This rejection has been rendered moot by the cancellation of claim 22.

Independent claim 1, as amended, recites in part:

a current D/A converter fluctuating the current signal
based on a digital signal;

Independent claim 6, as amended, recites in part:

wherein the first circuit comprises a current D/A
converter that is controlled by a digital signal.

Independent claim 19, as amended, recites in part:

a current D/A converter that changes the current
signal into a variable current signal based on a digital signal;

Independent claim 20, as amended, recites in part:

using a current D/A converter to change the current
signal into variable current signals based on a digital control
signal;

Each of the above independent claims requires a current D/A converter.

In contrast, the voltage control oscillator of Sha does not disclose or suggest a D/A converter that is controlled by a digital signal.

Consequently, Sha fails to teach and/or suggest the claimed invention. Specifically, Sha fails to teach and/or suggest a current D/A converter controlled by a digital signal as recited in the present claims. Specifically, Sha fails to teach and/or suggest a current D/A converter fluctuating the current signal based on a digital signal, as recited in claim 1. Similarly, Sha fails to teach and/or suggest a first circuit generating a plurality of current signals... wherein the first circuit comprises a current D/A converter that is controlled by a digital signal, as recited in claim 6. Similarly, Sha fails to teach and/or suggest a current D/A converter that changes the current signal into a variable current signal based on a digital signal, as recited in claim 19. Similarly, Sha fails to teach and/or suggest using a current D/A converter to change the current signal into variable current signals based on a digital control signal, as recited in claim 20. Therefore, Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 1, 3-8 and 19-20 under 35 U.S.C. § 102(b). Claim 2 depends on claim 1, thus, Applicant also requests reconsideration and withdrawal of the rejection of claim 2 under 35 U.S.C. § 103(a).

Claims 12-18 were rejected under 35 U.S.C. § 102(b) as being anticipated by Takla (U.S. Patent No. 5,978,425). In making this rejection, the Office Action asserts that this reference teaches each and every element of the claimed invention. Applicant respectfully disagrees and requests reconsideration of this rejection.

Claim 12, as amended, recites in part:

a first clock generator part generating a first clock signal, wherein the first clock generator part comprises... and a first current controlled oscillator generating the first clock signal based on the current signal; and

a second clock generator part generating a second clock signal, wherein the second clock generator part comprises a current D/A converter... and a second current controlled oscillator oscillating the second clock signal of which frequency corresponds to each of the variable current signals.

Claim 17, as amended, recites in part:

a first circuit generating a first clock signal of a frequency spectrum containing N number of peaks (N is an integer); and

a second circuit generating a second clock signal of a frequency containing a frequency spectrum with M number of peaks (M is an integer that is greater than 1, $M > N$) on the basis of a current signal generated based on a comparison result of comparing a standard clock signal and an operating clock signal.

In contrast, Takla teaches a hybrid phase-locked loop that employs analog and digital loop filters. The digital and analog loop filters are in respective digital and analog portions of the circuit and permit a combination of digital and analog adjustments of a signal output clock. Takla teaches a single current controlled oscillator 234 that produces a single clock.

Since Takla only teaches a single clock, Takla fails to teach and/or suggest both the recited first and second clocks. Takla also fails to teach and/or suggest both a first current-controlled oscillator generating the first clock signal and a second current-controlled oscillator generating the second clock signal recited in claim 12.

Consequently, Takla fails to teach and/or suggest the claimed invention. Specifically, Takla fails to teach two different current-controlled oscillators, each outputting its own clock signal, as recited in claim 12. Similarly, Takla fails to teach and/or suggest outputting two different clock signals with the second clock signal having a higher frequency than the first clock signal as recited in claim 17. Consequently, Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 12-18 under 35 U.S.C. § 102(b).

Conclusion

Applicant's amendments and remarks have overcome the objections and rejections set forth in the Office Action dated March 22, 2005. Specifically, Applicant's amendments to claims 6 and 12 and the cancellation of claim 9 overcome the objections to these claims. Applicant's amendments and remarks have also distinguished claims 1, 3-8 and 19-20 from Sha and thus overcome the rejection of these claims under 35 U.S.C. § 102(b). Applicant's remarks have also distinguished claims 12-18 from Takla and thus overcome the rejection of these claims under 35 U.S.C. § 102(b). Applicant's remarks regarding claim 1 have also distinguished claim 2 from the combination of Sha and Applicant's Admitted Prior Art and thus overcome the rejection of this claim under 35 U.S.C. § 103(a). The cancellation of claim 22 has rendered moot the rejection of this claim under 35 U.S.C. § 103(a). Accordingly, claims 1-8 and 12-20 are in condition for allowance. Therefore, Applicant respectfully requests consideration and allowance of claims 1-8 and 12-20.

Applicant submits that the application is now in condition for allowance. If the Examiner believes the application is not in condition for allowance, Applicant respectfully requests that the Examiner contact the undersigned attorney by telephone if it is believed that such contact will expedite the prosecution of the application.

In the event that this paper is not considered to be timely filed, Applicant respectfully petitions for an appropriate extension of time.

The Commissioner is authorized to charge payment for any additional fees which may be required with respect to this paper to our Deposit Account No. 01-2300, making reference to attorney docket number 100698-00014.

Respectfully submitted,
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Enclosures: Petition for Extension of Time

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